Abstract Submitted to the
International Conference on Strongly Correlated Electron Systems
University of Michigan, Ann Arbor
August 6-10, 2001

Specific Heat of $CeNi_{1-x}Cu_x$ in the 0.2 to 300K Temperature Range

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The $CeNi_{1-x}Cu_x$ compounds present an interesting evolution of their magnetic behaviour, showing an evanescence of the long range magnetic order and the rise of a spin glass like phase close to the x=0.2 composition [1,2]. Their specific heat has been measured in a large temperature range from 0.2 to 300 K. From the high temperature magnetic contribution we have studied the Crystalline Electric Field splitting of the magnetic Ce ground state. At low temperatures, clear anomalies have been observed at the temperatures corresponding to the spin glass freezing as detected by the χ_{ac} measurements, confirming the general trends of the phase diagram [2]. The electronic specific heat coefficient γ shows a continuos increase when we approach the Ni rich limit. Special attention has been paid to the compounds around the x=0.2 composition, in order to investigate the evolution of the short-range magnetic order (spin glass like phase). Only in the $CeNi_{0.85}Cu_{0.15}$ compound a divergence of C_P/T vs. T was found when T tends to 0K. These new results are discussed in the framework of theories of Non Fermi Liquids considering the disorder caused by the coexistence of magnetic and non magnetic phases.

[1] J. I. Espeso et al., Eur. Phys. J. B, **18** (2000) 625.
[2] J. García Soldevilla et al., Phys. Rev. B, **61** (2000) 6821.